

SEQUENZPROTOKOLL

<110> Medizinische Klinik und Poliklinik A des Universitätsklinikums Münster

<120> Fusionspolypeptide für die antivaskuläre Tumorthherapie

<130> P 51875

<160> 31

<170> PatentIn version 3.1

<210> 1

<211> 263

<212> PRT

<213> Homo sapiens

<220>

<221> Aminosäuresequenz von humanem TF

<400> 1

Ser Gly Thr Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser
1 5 10 15

Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
20 25 30

Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
35 40 45

Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
50 55 60

Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
65 70 75 80

Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
85 90 95

Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr
100 105 110

Ile Gln Ser Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu
115 120 125

Asp Glu Arg Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg
130 135 140

Asp Val Phe Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser
145 150 155 160

Ser Ser Ser Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu
165 170 175

Ile Asp Val Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val
180 185 190

Ile Pro Ser Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu

195	200	205
Cys Met Gly Gln Glu Lys Gly Glu Phe Arg Glu Ile Phe Tyr Ile Ile		
210	215	220
Gly Ala Val Val Phe Val Val Ile Ile Leu Val Ile Ile Leu Ala Ile		
225	230	235
Ser Leu His Lys Cys Arg Lys Ala Gly Val Gly Gln Ser Trp Lys Glu		
	245	250
Asn Ser Pro Leu Asn Val Ser		
260		

<210> 2
 <211> 2
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Aminosäuresequenz von tTF₁₋₂₁₈

<400> 2
 Ser Gly Thr Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser
 1 5 10 15

Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
 20 25 30

Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
 35 40 45

Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
 50 55 60

Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
 65 70 75 80

Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
 85 90 95

Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr
 100 105 110

Ile Gln Ser Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu
 115 120 125

Asp Glu Arg Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg
 130 135 140

Asp Val Phe Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser
 145 150 155 160

Ser Ser Ser Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu
 165 170 175

Ile Asp Val Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val
 180 185 190

Ile Pro Ser Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu

195

200

205

Cys Met Gly Gln Glu Lys Gly Glu Phe Arg
 210 215

<210> 3
 <211> 224
 <212> PRT
 <213> Artificial

<220>

<221> Aminosäuresequenz von tTF-GRGDSP

<400> 3

Ser Gly Thr Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser
 1 5 10 15

Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
 20 25 30

Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
 35 40 45

Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
 50 55 60

Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
 65 70 75 80

Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
 85 90 95

Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr
 100 105 110

Ile Gln Ser Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu
 115 120 125

Asp Glu Arg Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg
 130 135 140

Asp Val Phe Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser
 145 150 155 160

Ser Ser Ser Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu
 165 170 175

Ile Asp Val Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val
 180 185 190

Ile Pro Ser Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu
 195 200 205

Cys Met Gly Gln Glu Lys Gly Glu Phe Arg Gly Arg Gly Asp Ser Asp
 210 215 220

<210> 4
 <211> 225
 <212> PRT
 <213> Artificial

<220>

<221> Aminosäuresequenz von tTF-GNGRAHA

<400> 4

Ser Gly Thr Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser
 1 5 10 15

Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
 20 25 30

Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
 35 40 45

Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
 50 55 60

Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
 65 70 75 80

Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
 85 90 95

Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr
 100 105 110

Ile Gln Ser Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu
 115 120 125

Asp Glu Arg Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg
 130 135 140

Asp Val Phe Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser
 145 150 155 160

Ser Ser Ser Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu
 165 170 175

Ile Asp Val Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val
 180 185 190

Ile Pro Ser Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu
 195 200 205

Cys Met Gly Gln Glu Lys Gly Glu Phe Arg Gly Asn Gly Arg Ala His
 210 215 220

Ala
 225

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<210> 5
<211> 228
<212> PRT
<213> Artificial
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<221> Aminosäuresequenz von tTF-GALNGRSHAG

<400> 5

Ser Gly Thr Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser
1 5 10 15

Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
20 25 30

Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
35 40 45

Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
50 55 60

Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
65 70 75 80

Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
85 90 95

Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr
100 105 110

Ile Gln Ser Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu
115 120 125

Asp Glu Arg Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg
130 135 140

Asp Val Phe Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser
145 150 155 160

Ser Ser Ser Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu
165 170 175

Ile Asp Val Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val
180 185 190

Ile Pro Ser Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu
195 200 205

Cys Met Gly Gln Glu Lys Gly Glu Phe Arg Gly Ala Leu Asn Gly Arg
210 215 220

Ser His Ala Gly
225

<221> Aminosäuresequenz von tTF-GCNGRCG

Cys Met Gly Gln Glu Lys Gly Glu Phe Arg Gly Cys Asn Gly Arg Cys
210 215 220

Gly
225

<210> 7
 <211> 232
 <212> PRT
 <213> Artificial

<220>

<221> Aminosäuresequenz von tTF-GCNGRCVSGCAGRC

<400> 7

Ser	Gly	Thr	Thr	Asn	Thr	Val	Ala	Ala	Tyr	Asn	Leu	Thr	Trp	Lys	Ser	1	5	10	15
Thr	Asn	Phe	Lys	Thr	Ile	Leu	Glu	Trp	Glu	Pro	Lys	Pro	Val	Asn	Gln	20	25	30	
Val	Tyr	Thr	Val	Gln	Ile	Ser	Thr	Lys	Ser	Gly	Asp	Trp	Lys	Ser	Lys	35	40	45	
Cys	Phe	Tyr	Thr	Thr	Asp	Thr	Glu	Cys	Asp	Leu	Thr	Asp	Glu	Ile	Val	50	55	60	
Lys	Asp	Val	Lys	Gln	Thr	Tyr	Leu	Ala	Arg	Val	Phe	Ser	Tyr	Pro	Ala	65	70	75	80
Gly	Asn	Val	Glu	Ser	Thr	Gly	Ser	Ala	Gly	Glu	Pro	Leu	Tyr	Glu	Asn	85	90	95	
Ser	Pro	Glu	Phe	Thr	Pro	Tyr	Leu	Glu	Thr	Asn	Leu	Gly	Gln	Pro	Thr	100	105	110	
Ile	Gln	Ser	Phe	Glu	Gln	Val	Gly	Thr	Lys	Val	Asn	Val	Thr	Val	Glu	115	120	125	
Asp	Glu	Arg	Thr	Leu	Val	Arg	Arg	Asn	Asn	Thr	Phe	Leu	Ser	Leu	Arg	130	135	140	
Asp	Val	Phe	Gly	Lys	Asp	Leu	Ile	Tyr	Thr	Leu	Tyr	Tyr	Trp	Lys	Ser	145	150	155	160
Ser	Ser	Ser	Gly	Lys	Lys	Thr	Ala	Lys	Thr	Asn	Thr	Asn	Glu	Phe	Leu	165	170	175	
Ile	Asp	Val	Asp	Lys	Gly	Glu	Asn	Tyr	Cys	Phe	Ser	Val	Gln	Ala	Val	180	185	190	
Ile	Pro	Ser	Arg	Thr	Val	Asn	Arg	Lys	Ser	Thr	Asp	Ser	Pro	Val	Glu	195	200	205	
Cys	Met	Gly	Gln	Glu	Lys	Gly	Glu	Phe	Arg	Gly	Cys	Asn	Gly	Arg	Cys	210	215	220	
Val	Ser	Gly	Cys	Ala	Gly	Arg	Cys									225	230		

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<210> 8
<211> 228
<212> PRT
<213> Artificial
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$\langle 220 \rangle$

<221> Aminosäuresequenz von tTF-GCVLNGRMEC

<400> 8

[illegible]

<210> 9
 <211> 654
 <212> DNA
 <213> Artificial

<220>

<221> Nukleotidsequenz von tTF₁₋₂₁₈

<400> 9
 tcaggcacta caaataactgt ggcagcatat aatttaactt ggaaatcaac taatttcaag 60
 acaatthttgg agtgggaacc caaaccgctc aatcaagtct acactgttca aataagcact 120
 aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc 180
 gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctcttctc ctaccgggca 240
 gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc 300
 acaccttacc tggagacaaa cctcggacag ccaacaattc agagtthttga acaggtggga 360
 acaaaagtga atgtgaccgt agaagatgaa cggactthtag tcagaaggaa caacactthc 420
 ctaagcctcc gggatgttht tggcaaggac ttaattthata cactthatta ttggaaatct 480
 tcaagttcag gaaagaaaac agccaaaaca aacactaatg agthtttgat tgatgtggat 540
 aaaggagaaa actactgtth cagtgtthcaa gcagtgattc cctcccgaac agttaaccgg 600
 aaggtacag acagcccggt agagtgtatg ggccaggaga aaggggaatt caga 654

<210> 10
 <211> 672
 <212> DNA
 <213> Artificial

<220>

<221> Nukleotidsequenz von tTF-GRGDSP

<400> 10
 tcaggcacta caaataactgt ggcagcatat aatttaactt ggaaatcaac taatttcaag 60
 acaatthttgg agtgggaacc caaaccgctc aatcaagtct acactgttca aataagcact 120
 aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc 180
 gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctcttctc ctaccgggca 240
 gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc 300
 acaccttacc tggagacaaa cctcggacag ccaacaattc agagtthttga acaggtggga 360
 acaaaagtga atgtgaccgt agaagatgaa cggactthtag tcagaaggaa caacactthc 420
 ctaagcctcc gggatgttht tggcaaggac ttaattthata cactthatta ttggaaatct 480
 tcaagttcag gaaagaaaac agccaaaaca aacactaatg agthtttgat tgatgtggat 540
 aaaggagaaa actactgtth cagtgtthcaa gcagtgattc cctcccgaac agttaaccgg 600

aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagaggaaga 660
 ggtgattctc ca 672

<210> 11
 <211> 675
 <212> DNA
 <213> Artificial

<220>
 <221> Nukleotidsequenz von tTF-GNGRAHA

<400> 11
 tcaggcacta caaatactgt ggcagcatat aatttaactt ggaaatcaac taatttcaag 60
 acaatftttgg agtgggaacc caaaccgctc aatcaagtct aactgttca aataagcact 120
 aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc 180
 gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctctctc ctaccggca 240
 gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc 300
 acaccttacc tggagacaaa cctcggacag ccaacaattc agagttttga acaggtggga 360
 acaaaagtga atgtgaccgt agaagatgaa cggactttag tcagaaggaa caacactttc 420
 ctaagcctcc gggatgtttt tggcaaggac ttaatttata cactttatta ttggaaatct 480
 tcaagttcag gaaagaaaac agccaaaaca aacactaatg agtttttgat tgatgtggat 540
 aaaggagaaa actactgttt cagtgttcaa gcagtgattc cctcccgaac agttaaccgg 600
 aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagaggtaac 660
 ggaagagcac atgca 675

<210> 12
 <211> 684
 <212> DNA
 <213> Artificial

<220>
 <221> Nukleotidsequenz von tTF-GALNGRSHAG

<400> 12
 tcaggcacta caaatactgt ggcagcatat aatttaactt ggaaatcaac taatttcaag 60
 acaatftttgg agtgggaacc caaaccgctc aatcaagtct aactgttca aataagcact 120
 aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc 180
 gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctctctc ctaccggca 240
 gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc 300
 acaccttacc tggagacaaa cctcggacag ccaacaattc agagttttga acaggtggga 360

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acaaaagtga atgtgaccgt agaagatgaa cggacttttag tcagaaggaa caacactttc 420
ctaagcctcc gggatgtttt tggcaaggac ttaatttata cactttatta ttggaaatct 480
tcaagttcag gaaagaaaac agccaaaaca aacactaatg agtttttgat tgatgtggat 540
aaaggagaaa actactgttt cagtgttcaa gcagtgattc cctcccgaac agttaaccgg 600
aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagagggtgc 660
ttaaatggaa gatctcacgc tgggt 684

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<210> 13
 <211> 675
 <212> DNA
 <213> Artificial

<220>
 <221> Nukleotidsequenz von tTF-GCNGRCG

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<400> 13
tcaggcacta caaatactgt ggcagcatat aatttaactt ggaaatcaac taatttcaag 60
acaatttttg agtgggaacc caaaccgctc aatcaagtct acactgttca aataagcact 120
aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc 180
gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctctctc ctaccggca 240
gggaatgttg agagcaccgg ttctgctggg gagcctctgt atgagaactc ccagagttc 300
acaccttacc tggagacaaa cctcggacag ccaacaattc agagttttga acaggtggga 360
acaaaagtga atgtgaccgt agaagatgaa cggacttttag tcagaaggaa caacactttc 420
ctaagcctcc gggatgtttt tggcaaggac ttaatttata cactttatta ttggaaatct 480
tcaagttcag gaaagaaaac agccaaaaca aacactaatg agtttttgat tgatgtggat 540
aaaggagaaa actactgttt cagtgttcaa gcagtgattc cctcccgaac agttaaccgg 600
aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagagggtgc 660
aacggtagat gtggt 675

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<210> 14
 <211> 696
 <212> DNA
 <213> Artificial

<220>
 <221> Nukleotidsequenz von tTF-GCNGRCVSGCAGRC

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<400> 14
tcaggcacta caaatactgt ggcagcatat aatttaactt ggaaatcaac taatttcaag 60

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acaattttgg agtgggaacc caaaccgctc aatcaagtct acactgttca aataagcact 120
aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc 180
gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctcttct ctacccggca 240
gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc 300
acaccttacc tggagacaaa cctcggacag ccaacaattc agagttttga acaggtggga 360
acaaaagtga atgtgaccgt agaagatgaa cggacttttag tcagaaggaa caacactttc 420
ctaagcctcc gggatgtttt tggcaaggac ttaatttata cactttatta ttggaaatct 480
tcaagttcag gaaagaaaac agccaaaaca aacactaatg agtttttgat tgatgtggat 540
aaaggagaaa actactgttt cagtgttcaa gcagtgattc cctcccgaac agttaaccgg 600
aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagaggttgt 660
aatggaagat gtgtttctgg atgtgcagga cgatgt 696

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<210> 15
 <211> 684
 <212> DNA
 <213> Artificial

<220>
 <221> Nukleotidsequenz von tTF-GCVLNGRMEC

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<400> 15
tcaggcacta caaatactgt ggcagcatat aatttaactt ggaaatcaac taatttcaag 60
acaattttgg agtgggaacc caaaccgctc aatcaagtct acactgttca aataagcact 120
aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc 180
gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctcttct ctacccggca 240
gggaatgtgg agagcaecgg ttctgctggg gagcctctgt atgagaactc cccagagttc 300
acaccttacc tggagacaaa cctcggacag ccaacaattc agagttttga acaggtggga 360
acaaaagtga atgtgaccgt agaagatgaa cggacttttag tcagaaggaa caacactttc 420
ctaagcctcc gggatgtttt tggcaaggac ttaatttata cactttatta ttggaaatct 480
tcaagttcag gaaagaaaac agccaaaaca aacactaatg agtttttgat tgatgtggat 540
aaaggagaaa actactgttt cagtgttcaa gcagtgattc cctcccgaac agttaaccgg 600
aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagaggtatgc 660
gtcttaaatg gtaggatgga atgc 684

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<210> 16
<211> 45
<212> DNA
<213> Artificial

<220>

<221> 5' Oligonukleotidprimer für die Herstellung von tTF₁₋₂₁₈

<400> 16
catgccatgg gatcaggcac tacaaatact gtggcagcat ataat 45

<210> 17
<211> 40
<212> DNA
<213> Artificial

<220>

<221> 3' Oligonukleotidprimer für die Herstellung von tTF₁₋₂₁₈

<400> 17
cgggatccta ttatctgaat tcccctttct cctggcccat 40

<210> 18
<211> 45
<212> DNA
<213> Artificial

<220>

<221> 5' Oligonukleotidprimer für die Herstellung von tTF-GRGDSP

<400> 18
catgccatgg gatcaggcac tacaaatact gtggcagcat ataat 45

<210> 19
<211> 43
<212> DNA
<213> Artificial

<220>

<221> 3' Oligonukleotidprimer für die Herstellung von tTF-GRGDSP

<400> 19
cgggatccta ttatggagaa tcacctcttc ctctgaattc ccc 43

<210> 20
<211> 45
<212> DNA
<213> Artificial

<220>

<221> 5' Oligonukleotidprimer für die Herstellung von tTF-GNGRAHA

<400> 20
catgccatgg gatcaggcac tacaaatact gtggcagcat ataat 45

<210> 21
<211> 46
<212> DNA
<213> Artificial

<220>

<221> 3' Oligonukleotidprimer für die Herstellung von tTF-GNGRAHA

<400> 21
cgggatccta ttatgcatgt gctcttccgt tacctctgaa ttcccc 46

<210> 22
<211> 45
<212> DNA
<213> Artificial

<220>

<221> 5' Oligonukleotidprimer für die Herstellung von tTF-GCNGRCG

<400> 22
catgccatgg gatcaggcac tacaaatact gtggcagcat ataata 45

<210> 23
<211> 46
<212> DNA
<213> Artificial

<220>

<221> 3' Oligonukleotidprimer für die Herstellung von tTF-GCNGRCG

<400> 23
egggatccta ttaaccacat ctaccgttgc agcctctgaa ttcccc 46

<210> 24
<211> 45
<212> DNA
<213> Artificial

<220>

<221> 5' Oligonukleotidprimer für die Herstellung von tTF-GCNGRCVSGCAGRC

<400> 24
catgccatgg gatcaggcac tacaaatact gtggcagcat ataata 45

<210> 25
<211> 67
<212> DNA
<213> Artificial

<220>

<221> 3' Oligonukleotidprimer für die Herstellung von tTF-GCNGRCVSGCAGRC

<400> 25
cgggatccta ttaacatcgt cctgcacatc cagaaacaca tcttccatta caacctctga 60

attcccc

67

<210> 26
<211> 45
<212> DNA
<213> Artificial

<220>

<221> 5' Oligonukleotidprimer für die Herstellung von tTF-GCVLNGRMEC

<400> 26
catgccatgg gatcaggcac tacaaatact gtggcagcat ataataat 45

<210> 27
<211> 55
<212> DNA
<213> Artificial

<220>

<221> 3' Oligonukleotidprimer für die Herstellung von tTF-GCVLNGRMEC

<400> 27
cgggatccta ttagcattcc atcctaccat ttaagacgca tcctctgaat tcccc 55

<210> 28
<211> 45
<212> DNA
<213> Artificial

<220>

<221> 5' Oligonukleotidprimer für die Herstellung von tTF-GALNGRSHAG

<400> 28
catgccatgg gatcaggcac tacaaatact gtggcagcat ataataat 45

<210> 29
<211> 55
<212> DNA
<213> Artificial

<220>

<221> 3' Oligonukleotidprimer für die Herstellung von tTF-GALNGRSHAG

<400> 29
cgggatccta ttaaccagcg tgagatcttc catttaaagc acctctgaat tcccc 55

<210> 30
<211> 45
<212> PRT

<213> Artificial

<220>

<221> Aminosäuresequenz des Affinitäts-tags

<400> 30

His	His	His	His	His	His	Ser	Ser	Gly	Leu	Val	Pro	Arg	Gly	Ser	Gly
1				5					10					15	
Met	Lys	Glu	Thr	Ala	Ala	Ala	Lys	Phe	Glu	Arg	Gln	His	Met	Asp	Ser
			20					25					30		
Pro	Asp	Leu	Gly	Thr	Asp	Asp	Asp	Asp	Lys	Ala	Met	Gly			
		35					40					45			

<210> 31

<211> 269

<212> PRT

<213> Artificial

<220>

<221> Aminosäuresequenz von tTF-GRGDSP mit N-terminalem Affinitäts-tag

<400> 31

His	His	His	His	His	His	Ser	Ser	Gly	Leu	Val	Pro	Arg	Gly	Ser	Gly
1				5					10					15	
Met	Lys	Glu	Thr	Ala	Ala	Ala	Lys	Phe	Glu	Arg	Gln	His	Met	Asp	Ser
			20					25					30		
Pro	Asp	Leu	Gly	Thr	Asp	Asp	Asp	Asp	Lys	Ala	Met	Gly	Ser	Gly	Thr
		35					40					45			
Thr	Asn	Thr	Val	Ala	Ala	Tyr	Asn	Leu	Thr	Trp	Lys	Ser	Thr	Asn	Phe
	50					55					60				
Lys	Thr	Ile	Leu	Glu	Trp	Glu	Pro	Lys	Pro	Val	Asn	Gln	Val	Tyr	Thr
65					70					75				80	
Val	Gln	Ile	Ser	Thr	Lys	Ser	Gly	Asp	Trp	Lys	Ser	Lys	Cys	Phe	Tyr
				85					90					95	
Thr	Thr	Asp	Thr	Glu	Cys	Asp	Leu	Thr	Asp	Glu	Ile	Val	Lys	Asp	Val
			100					105					110		
Lys	Gln	Thr	Tyr	Leu	Ala	Arg	Val	Phe	Ser	Tyr	Pro	Ala	Gly	Asn	Val
		115					120					125			
Glu	Ser	Thr	Gly	Ser	Ala	Gly	Glu	Pro	Leu	Tyr	Glu	Asn	Ser	Pro	Glu
		130				135					140				
Phe	Thr	Pro	Tyr	Leu	Glu	Thr	Asn	Leu	Gly	Gln	Pro	Thr	Ile	Gln	Ser
145					150					155					160
Phe	Glu	Gln	Val	Gly	Thr	Lys	Val	Asn	Val	Thr	Val	Glu	Asp	Glu	Arg
				165					170					175	
Thr	Leu	Val	Arg	Arg	Asn	Asn	Thr	Phe	Leu	Ser	Leu	Arg	Asp	Val	Phe
			180					185					190		

Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser Ser Ser Ser
 195 200 205

Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu Ile Asp Val
 210 215 220

Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val Ile Pro Ser
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Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu Cys Met Gly
 245 250 255

Gln Glu Lys Gly Glu Phe Arg Gly Arg Gly Asp Ser Asp
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<211> 270

<212> PRT

<213> Artificial

<220>

<221> Aminosäuresequenz von tTF-GNGRAHA mit N-terminalem Affinitäts-tag

<400> 32

His His His His His His Ser Ser Gly Leu Val Pro Arg Gly Ser Gly
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Met Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser
 20 25 30

Pro Asp Leu Gly Thr Asp Asp Asp Asp Lys Ala Met Gly Ser Gly Thr
 35 40 45

Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser Thr Asn Phe
 50 55 60

Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln Val Tyr Thr
 65 70 75 80

Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys Cys Phe Tyr
 85 90 95

Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val Lys Asp Val
 100 105 110

Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala Gly Asn Val
 115 120 125

Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn Ser Pro Glu
 130 135 140

Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr Ile Gln Ser
 145 150 155 160

Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu Asp Glu Arg
 165 170 175

Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg Asp Val Phe
 180 185 190

Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser Ser Ser Ser
195 200 205

Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu Ile Asp Val
210 215 220

Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val Ile Pro Ser
225 230 235 240

Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu Cys Met Gly
245 250 255

Gln Glu Lys Gly Glu Phe Arg Gly Asn Gly Arg Ala His Ala
260 265 270